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Functional Categories and Second Language Acquisition

Ken-ichi Ōno

The ideas and approaches of the Government and Binding (GB) theory have been employed in the fields of both first language (L1) acquisition and second language (L2) acquisition research for the past two decades. Quite a few empirical and theoretical studies based on the GB theory have contributed in making further clear the processes and stages of L1 acquisition and L2 acquisition, shedding new light on the similarities and differences of these two types of language acquisition.

The researchers of L2 acquisition, who were based on their own empirical studies and/or the studies of other researchers, have adopted different positions regarding how L2 learners can or cannot access to Universal Grammar (UG). For example, Bley-Vroman (1989) and Johnson and Newport (1991) take the position that L2 learners have no longer access to UG. Johnson and Newport reached their conclusion by investigating the linguistic achivements among immigrants who vary in the arrival age in the United States.

There are the scholars who claim that UG is still fully accessible to L2 learners. Flynn (1989), who adopts this position, studied the re-setting mechanism of the head-direction parameter in adult Japanese learners of English L2. She also investigated whether Japanese learners could successfully instantiate the Subjacency principle and acquire functional categories (which some linguists claim are non-existent in Japanese) in English. Thomas (1991), on the same assumption, examined the acquisition of reflexive binding.

Further, there are the proponents of Indirect Access who argue that L2 learners only have access to UG via their L1. Schachter (1989), for example, tested the operation of the Subjacency principle by Korean L1 learners of English as L2 so as to support this position. In addition, she cited a study by a Korean researcher which examined the Governing Category (GC) parameter supposedly set differently in English and Korean.

Finally there are those who argue that L2 learners have Partial Access; ① Principles of UG are available to L2 learners ② The availability of parameters

is different, depending on a particular parameter. White (1992), supporting this position, tested the L2 acquisition of wh-movement by learners whose L1 does not have it.

The L2 acquisition studies above, which were based on the GB theory and accordingly four positions on the accessibility of UG to L2 learners, will inevitably have to be reassessed and, if necessary, be modified as the Generative linguistics itself moves forward from the GB theory to the Minimalist Program (MP) in which some basic principles and conceptual tools of the GB are being gotten rid of. We do not know yet clearly how to employ the new analytical techniques of the MP in the L2 acquisition research. We have not either grasped its implications in the UG-based L2 acquisition research thus far. However, through recent related publications, we can at least overview what is happening in L2 acquisition research in accordance with the evolution of Generative linguistic theory. This paper will concentrate on functional categories in the MP and consider, examining different arguments, how the concept of functional categories could have the implications in L2 acquisition studies.

Functional Categories

1. INFL(I)

The importance of functional categories compared with lexical categories has been established in the derivational process of X' structure. Radford (1998) paid attention to the relation between this concept of functional category and L1 acquisition and studied the acquisitional stages of functional categories in child English L1. His *maturational hypothesis* suggests that in the early stage, only lexical categories are available to a child and that it is around 24 months when the child begins to manage functional categories. There are the researchers, on the other hand, who support the *continuity hypothesis* that a child can use functional categories from the early stage (Ohba 1999).

Most generative linguists who analyze Japanese presuppose that Japanese, like English, has functional categories. So, generally we can discuss the acquisition of functional categories by L2 learners, say child or adult Japanese learners of English L2 on that presupposition. The problem is, however, that not every generative linguist agrees that Japanese has functional categories or at least, the same types of functional categories as English (Whitman 1998). Therefore, before considering the connection between functional categories and L2 acquisition, we have to examine how the concept of functional categories has developed in X' syntax and whether it should be the same or different in Japanese.

Radford (1999) explains the necessity of assuming the structure of an infinitive phrase (1) compared with a verb phrase (2) below:

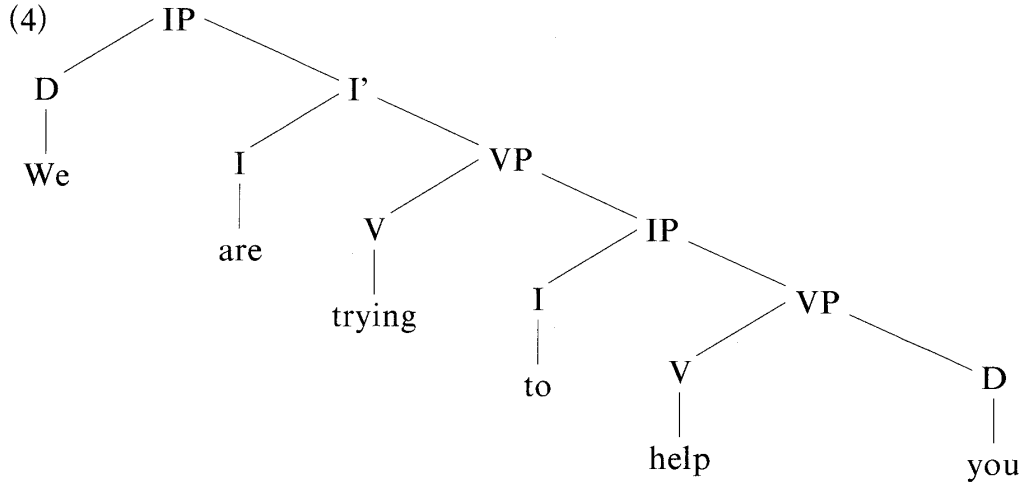
(1) [IP[I to][VP[V help][D you]]]
(2) [VP[V help][D you]]

If we assume these two different structures, we can then discern the following contrasts in (3) (p.63):

(3) (a) They *ought* **to help you**
(b) *They *ought* **help you**

That is, *ought* requires an infinitive phrase, not a verb phrase as its complement. Just as we assume that the infinitive particle *to* is INFL(Inflection=I) *and to help you* (IP) is a projection of the infinitive *to*, we can argue that auxiliaries like *are* belong to the same INFL and the clause *We are trying to help you* is considered a projection of the auxiliary *are* (=I) that has the structure (4) below (p.65):

(4)

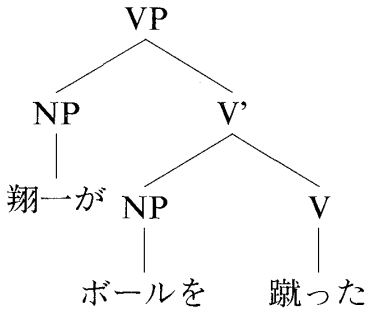


Notice, in the structure above, an expression is still incomplete if we only merge an auxiliary *are* (=I) with a verb phrase (=VP), which results in I'. We make a complete auxiliary expression (=IP) only when we further merge the I' with its subject *we* (=D=a pronominal determiner). Thus, we set up one of the functional categories, i.e. INFL(=I) and its projections I' and IP.

In Japanese syntax, INFL and its projections are also assumed for the same reason. Hasegawa (1999 pp.60-61) gives an explanation, starting with the following structure:

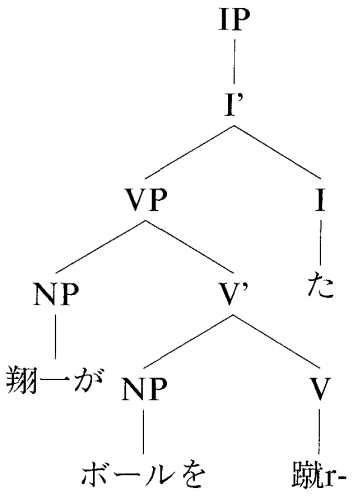
(5) (a) 翔一がボールを蹴った。

(b)

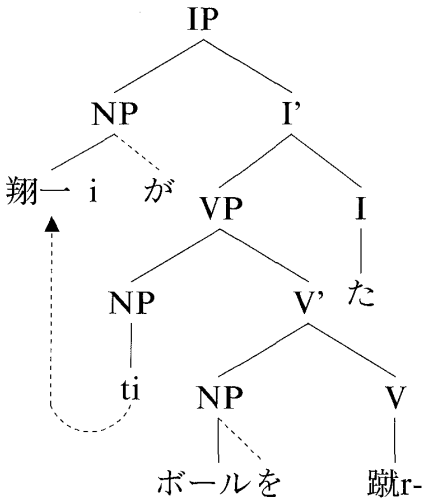


The structure (5b) above, however, can generate not only the sentence (5a) but also a sentence like (6) 翔一が ボールを 蹴る. While the proposition of (5a) and that of (6) are the same, the difference resides in the tense. The tense, therefore, must be independent of VP which deals with proposition. And we can place the tense in the same category as INFL because the tense is expressed as the inflection of a verb, in this case「た」and「る」. Thus, we assume that INFL「た」takes the VP as its complement and the sentence (5a) will have the structure (7) below rather than (5b):

(7)



(8)



Comparing (7) above to its English counterpart, the structure (4), however, we notice that (7) lacks in an argument in its **specifier** position of IP. So, in order to make (7) a complete X' syntax, Hasegawa claims, we would rather have the structure (8) above (1999 p.65). In (8), the subject「翔一」moves out of VP to the specifier position of IP, leaving its trace (=t) in the original position. The reason of the movement is that the subject「翔一」has to be given the nominative case or「が」-case in Japanese because of **Case filter**, which stipulates that any sentence is ungrammatical that contains a noun phrase (=NP) without having a case (i.e. without having a case-particle such as「を」and「が」or a postposition of Japanese). It is assumed that「が」-case is given in the specifier position of IP by its **head** I「た」.

When we assume, as above, that a sentence is the projection, or more

specifically the maximal projection (i.e. IP) of an INFL (=I), I is presumed to be a head which has VP as its complement. Then, the directional difference between a head and its complement of the functional category IP in English and Japanese and its accompanying problem in L2 acquisition can be explained by means of the head-direction parameter (Ōno 1996). Whereas, as we see, in the English structure (4), a head, I precedes a complement, VP (i.e. a head-initial language), in the Japanese structure (8), a head, I follows after a complement, VP (i.e. a head-final language). Consequently, in acquiring the IP of a target language, L2 learners between English and Japanese have only to switch the head-direction parameter as in other acquisitional cases.

As to why an INFL is assumed to give the nominative case or 「が」 -case to an NP, Takezawa (1998 pp.48-54) offers the following evidence. In Japanese, in contrast to the sentences (9a) and (10a) below, the embedded clauses parenthesized by [ ] in (9b) and (10b) are regarded as tenseless, that is, without INFL:

(9) (a) 花子が寿司を食べる。
(b) 太郎は[花子*が/に　寿司を食べ]させた。
(10) (a) 花子が本を読む。
(b) 太郎は[花子*が/に　本を読んで]もらった。

(9b) and (10b) are the complex sentences with a causative verb 「させる」 and a "beneficial" verb 「もらう」. Notice, in both (9b) and (10b), 「花子」 in the embedded clauses cannot be assigned the nominative case 「が」 although it is interpreted as a subject in both clauses. This, argues Takezawa, is because there exists no INFL in the embedded clauses and therefore, this can be the evidence that, in Japanese as well as in English, it is an INFL that gives an NP the nominative case. Takezawa introduces another type of evidence:

(11) (a) 太郎は[花子の大学合格が/を　とてもうれしい/羨ましいと]思っている。
(b) 太郎は[花子の大学合格*が/を　とてもうれしく/羨ましく]思っている。

Just like the English verbs *believe* and *consider* which can be followed by either a clause headed by a complementizer (=COMP) *that* or an infinitive phrase, a Japanese verb 「思う」 also takes two kinds of complements. One is a clause headed by a COMP 「と」 which contains an INFL with tense as in (11a) above. The other is, as in (11b), a ren-yokei (連用形) complement which has a tenseless INFL that, therefore, coincides with an English infinitive phrase. Thus, the ren-yokei embedded complement in (11b) cannot give its subject 「大

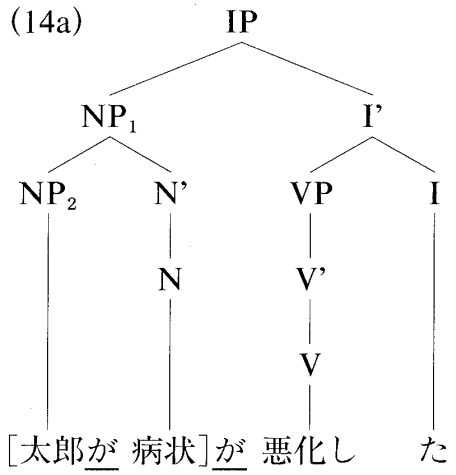
学合格」the nominative case「が」because it lacks in an INFL including tense. In conclusion here, we should say more precisely that it is not an INFL but an INFL [+Tense] that decides the appearance of「が」. In my opinion, however, Takezawa's (11b) above might permit the use of「が」in some situations and I consider there still remains some ambiguity here.

Further, the structure called *Multiple Subject Construction* is cited in supporting the argument that an INFL [+Tense] is a nominative「が」-case assigner in Japanese. Unlike English, Japanese allows a sentence to have two or more NPs with the nominative case「が」(Takezawa 1998 pp.51-53):

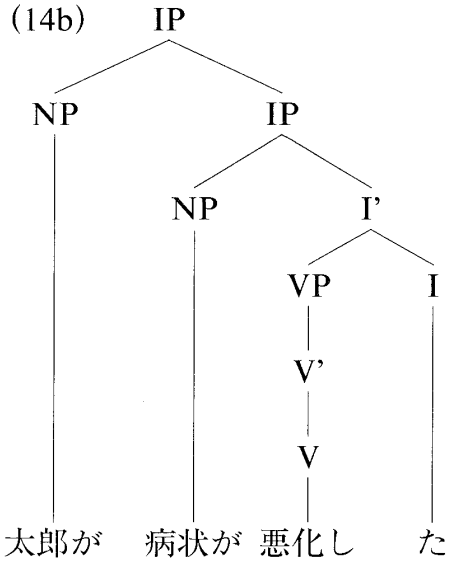
(13) (a) 太郎が病状が悪化した（らしい）。
(b) 文明国が男性が平均寿命が長い。

If an INFL [+Tense] gives「が」-case to an NP, how can we analyze a structure in which an INFL [+Tense] appears to assign「が」-case to two NPs as in (13a) above? One conceivable structure of it, argues Takezawa, might be like (14a):

(14a)



(14b)



(14a) presupposes that [太郎が 病状] forms one large noun phrase, i.e. NP_1 in which NP_2 [太郎が] is included, for it has basically the same meaning as the NP [太郎の病状] in the following sentence; (15) [NP太郎の病状]が悪化した. If this presupposition is true, the INFL「た」in (14a) supposedly gives「が」-case to NP_1, and then to NP_2 by crossing the boundary of NP_1. But, there is a reason we cannot suppose that [太郎が 病状] does constitute one NP. When we look at the following examples:

(16) (a) *[NP太郎の，最近，病状]が悪化した（らしい）。
(b) 太郎が，最近，病状が悪化した（らしい）。

we notice that, in (16a), a sentential adverb「最近」cannot appear within an NP, while in (16b),「最近」can be used between「太郎が」and「病状が」. Thus, we consider that it is better to assume that NP「太郎が」is outside NP「病状が」and that these two NPs are directly dominated by IP. (14b) above shows this structure where IP is adjoined to another IP (i.e. **Adjunction**) and the INFL「た」is considered to assign「が」-case in these IPs. Then, Takezawa mentions the potentiality of parametric difference between English INFL and Japanese INFL. That is, English INFL can assign the nominative case only to one NP, whereas Japanese INFL can give the nominative cases to two or more NPs.

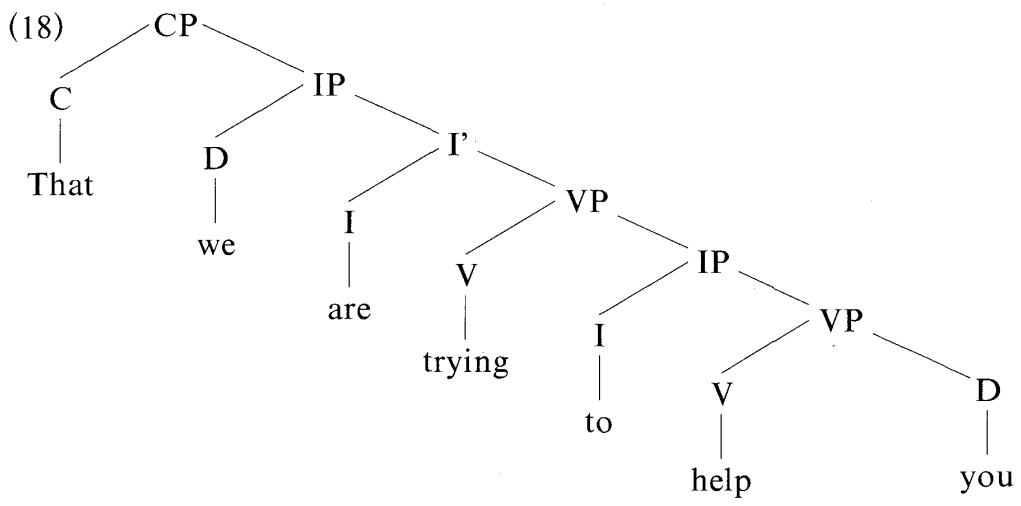
We must recall here that, as stated above, not every generative linguist agrees that Japanese, like English, has functional categories. According to Fukui's analysis (1995), there are basically no functional categories in Japanese, which I will mention later.

2. COMP(C)

This section deals with another functional category, i.e. COMP (Complementizer=C) and its projections C' and CP (Complementizer Phrase) which are important when we look at the arguments regarding the acquisitional stages of functional categories in both L1 and L2. Radford (1999) uses the following interaction in order to introduce the role which a complementizer (=COMP) *that* plays in speaker B's reply (p.66):

(17) SPEAKER A: What are you saying?
SPEAKER B: *That we are trying to help you*

In the structure of B's reply, the COMP *that* is assumed to merge with the IP *we are trying to help you* to form the CP in (18) below:



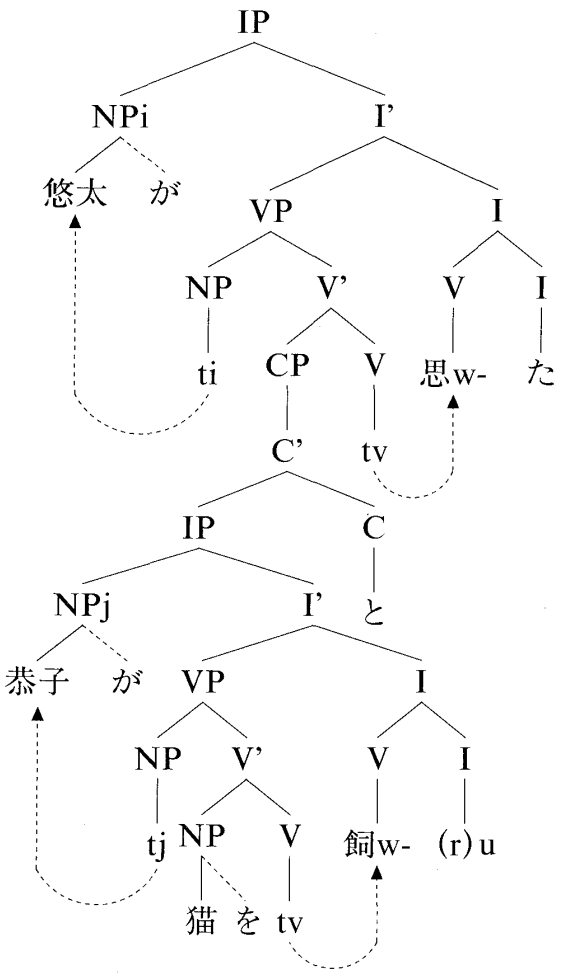
The Japanese corresponding COMP of *that*, i.e.「と」is taken up by Hasegawa (1999) to introduce a Japanese CP structure. She contrasts it with a PP(Post-positional Phrase) structure as follows (p.102):

(19) (a) 悠太が[[恭子が猫を飼う]と]思った。

(b) 朋子が[[翔一が試合に勝った]から]喜んだ。

Both「と」and「から」above are categorized into setsuzoku-joshi (or "conjunctive particle") in traditional Japanese grammar. From Generative linguistic point of view, however, while「から」is considered to be a postposition which indicates the meaning of "cause" and takes either NP or IP as its complement,「と」is assumed to be a COMP which has no meaning but has the grammatical function to connect IP with another IP (i.e. a main clause). The sentence (19a) containing「と」will have the structure (20) below (p.104):

(20)



As we saw in the structure (8) before, also in (20) above, the subject (悠太 and 恭子 respectively) moves out of VP to the specifier position of IP to receive the nominative「が」-case, leaving its trace (=t) in the original position (i.e. **subject raising**). In addition, the verb (思w- and 飼w- respectively) is adjoined to I (i.e. **verb raising**). Thus we can see that COMP as well as

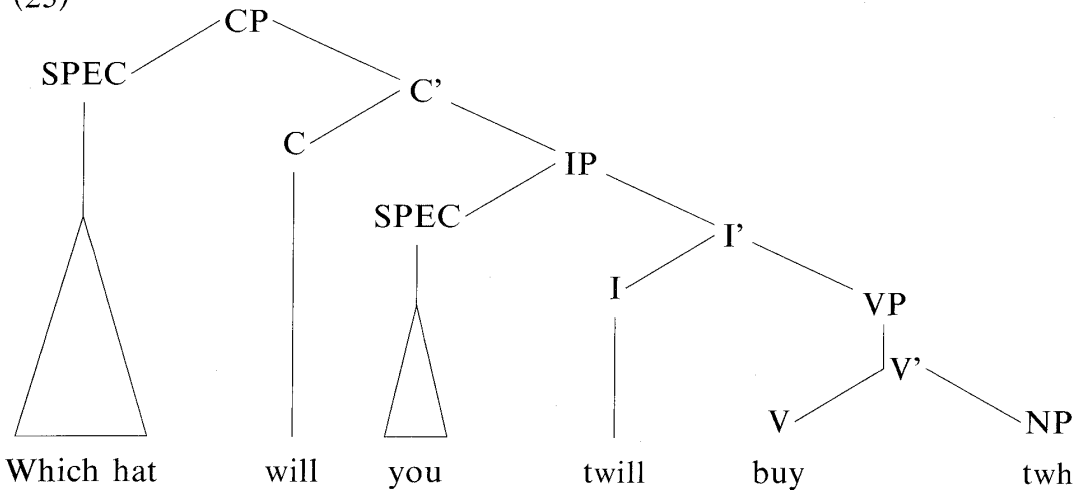
INFL is a functional category which concerns a sentence (or a clause). And if we compare (20) with its English counterpart, the structure (18), we notice that here again, the head-direction parameter decides the position of a head, C (OMP) and its complement, IP. That is, a head-initial language, English requires the head, C to precede its complement, IP whereas a head-final language, Japanese lets the head, C follow after IP. This is exactly the same as the case of I (NFL) and VP we saw before. Whitman (1998 p.111) shows the following examples concerning this:

(21) (a) I don't know [<u>if</u> Eri will buy that hat].
(b) [恵里がその帽子を買う<u>か</u>]わからない。
(22) (a) The man said [S' <u>that</u>[S Eri will buy that hat]].
(b) 男は[[恵里がその帽子を買うだろう]S <u>と</u>] S'言った。

While in (21a), the COMP *if* appears before the IP *Eri will buy that hat* (i.e. head-initial), in its Japanese corresponding sentence (21b) the COMP「か」comes after the IP「恵里がその帽子を買う」(i.e. head-final). We can see the same directional difference between *that* or「と」and the IPs (=complements) in (22) as well. Notice here that S' and S should be analyzed as CP and IP respectively in the present X' framework.

In connection with (21a), the interrogative sentence *Which hat will you buy?* is supposed to have the following structure (23) (Whitman p.112):

(23)



In the structure above, the wh-phrase *which hat* is in the specifier (SPEC) position of CP and the auxiliary verb (AUX) *will* is moved up from I (NFL) to C (OMP), i.e. the head position of CP. These are **wh-movement** and **subject-aux inversion** (=**head-to-head movement**) respectively, and in this analysis, as we see, SPEC and C are the landing sites of the movements. And twh is the trace of *which hat* and twill is the trace of *will*. In a yes-no question in Eng-

lish, subject-aux inversion also occurs and so, as in the structure (23), an auxiliary verb is moved up from I to C. This analysis of subject-aux inversion then explains the fact that subject-aux inversion does not occur in an English embedded interrogative clause. In an embedded interrogative clause like (21a), because the COMP *if* is already situated in C, the movement of the AUX *will* is prohibited. Hence, while in the main sentence (24a) below, subject-aux inversion takes place, in the embedded interrogative sentence (24b) it does not (Whitman p.113):

(24) (a) Will Eri buy that hat?
(b) *I don't know [if will Eri buy that hat].

In our discussion thus far, we have taken it for granted that Japanese, like English, has functional categories such as I and C. As I mentioned above, however, a researcher like Fukui (1995) does not agree with the idea. Fukui rather claims that Japanese lacks C and another functional category D (Determiner=DET). As to I, considering that syntactic evidence for this functional category in Japanese is deficient, we should conclude, argues Fukui, that Japanese has "very defective I" which lacks specifier. Whitman (1998) gives yet a different opinion concerning the existence or the status of functional categories in Japanese. He argues that although Japanese has both C and I, evidence for the existence of specifier in CP is scarce, while in the case of IP, the existence of specifier is more obvious than that of head. These different opinions regarding the existence of functional categories in Japanese will affect the acquisitional studies between English and Japanese. That is, if Fukui's argument is correct, Japanese learners of English L2 have to be aware of English functional categories which do not exist in their own language whereas English learners of Japanese L2 must recognize the nonexistence or the different status of functional categories in Japanese. Before we conclude this section, we will look at Fukui's argument and see why he claims that Japanese lacks the functional category, C.

Fukui (1995) takes up two representative elements, i.e. the question morpheme *ka* (「か」) 'Q' and the subordinate clause marker *to* (「と」) 'that' which we have assumed thus far to be complementizers in Japanese. First, we have the following examples of yes/no questions with the "particle" *ka* (p. 115):

(25) (a) John-wa sore-o kaimasi-ta ka
'Did John buy it'
(b) John-wa sore-o kaimasi-ta
'John bought it'

(c) Bill-wa [John-ga sore-o katta ka] siranai
'Bill does not know whether John bought it or not'
(d) *Bill-wa [John-ga sore-o katta] siranai

While example (25b) becomes a declarative sentence, lacking the interrogative meaning in the absence of *ka*, (25d) does not only have the interrogative meaning, but also is ungrammatical. And these examples show that *ka* works as the "Q-morpheme" having the feature [+Q]. The question here is whether *ka* is an instance of C or something else. Fukui argues that the element *ka* is a noun that has the feature [+Q].

Fukui claims that the ungrammaticality of (25d) indicates the nominal nature of *ka* because while the factive verb *sir-* 'know' requires a noun phrase complement, the embedded clause of (25d) lacking *ka*, which must make a clause nominal, does not satisfy the requirement of a noun phrase complement by the verb *sir-* 'know.' Fukui also points out that *ka* can be followed by Case particles such as *-ga* and *-o*. According to Fukui, "……, these Case particles can only be attached to a noun phrase and can never be attached to other categories, ……" (pp.115-16). As the following examples show, "both *-ga* and *-o* can in fact be attached to clauses accompanied by *ka*" (p.117):

(26) (a) [[S John-ga nani-o katta] ka] -ga mondai da
'The problem is what John bought'
(b) John-wa [[S Bill-ga nani-o kau] ka] -o siritagatte-iru
'John wants to know what Bill is going to buy'

It is clear from these examples, argues Fukui, that *ka* bears the nominal nature.

As for the categorial status of *to* 'that,' Fukui states that *to* is a postposition rather than the functional category, C (=complementizer). The examples below show that the topic marker *-wa* can be joined to a noun phrase or to a postpositional phrase. But it cannot be joined to a sentence (p.118):

(27) (a) [NP John]-wa Bill-o nagutta
'John hit Bill'
(b) [PP Tokyo-e]-wa Bill-ga itta
'As for Tokyo, Bill went there'
(c) *[S John-ga Bill-o nagutta]-wa mondai da
'It is a problem that John hit Bill'

Clauses accompanied by *to*, however, are grammatical with the topic marker *-wa* (p.118):

(28) [[S John-ga Mary-o nagutta] to]-wa odoroki da
'It is surprising that John hit Mary'

The clause with *to* in (28) above must be either a noun phrase or a postpositional phrase because a topic marker *-wa* can occur only with these phrases. And the following examples show that clauses with *to* must be postpositional phrases rather than noun phrases, because although, as Fukui has pointed out above, "*-ga* and *-o* can only be attached to noun phrases," the following clauses with *to* where "Case particles *-ga* or *-o* is attached to" are ungrammatical (p.119):

(29) (a) *[[S John-ga Mary-o nagutta] to]-ga odorokida
'It is surprising that John hit Mary'
(b) *John-wa [[S Bill-ga Mary-o nagutta] to]-o sitteiru
'John knows that Bill hit Mary'

Thus Fukui concludes that clauses with *to* are postpositional phrases and therefore *to* is a postposition. So far, we have seen Fukui's argument that two representative elements *ka* and *to* in Japanese, which have been assumed to be complementizers, are in fact a noun and a postposition respectively. And, since there are no other "plausible candidates," argues Fukui, we should conclude that "there is no syntactic category C in Japanese" (p.120).

To conclude, this paper has presented various arguments on functional categories whose acquisition attracts considerable attention of both L1 and L2 researchers in recent years, and we have seen that the issue might be more complicated than we first expected. A researcher like Hasegawa explains the structure of Japanese on the assumption that Japanese, like English, also has functional categories. She then attributes the different structures, that is, the directional difference between I and VP in English and Japanese to the head-direction parameter. In the same way, Hasegawa and Whitman examine the directional difference between another functional category, C and its complement, IP in English and Japanese in terms of the head-direction parameter. Thus, according to this argument, L2 acquisition between English and Japanese is a matter of switching the head-direction parameter just as the former UG-based L2 acquisition theory claimed.

As we saw, however, not every generative linguist thinks that Japanese has the same types of functional categories as English. Fukui, as stated above, claims that Japanese lacks the functional categories, C and D. And, as for I, he argues that Japanese has "very defective I" which lacks specifier. Furthermore, Whitman gives another opinion that although Japanese has both C and I, evidence for the specifier in CP is scarce, whereas the specifier in IP is more obvious. Thus, it is clear that when we adopt the UG concept of functional

categories into L2 acquisition studies, we need further research to get a unified theory on Japanese functional categories. Then, we will be able to make more positive studies on the L2 acquisitional stages of functional categories as Radford did research in child English L1.

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